CITY OF FRANKLIN (PWS 6210007)
SOURCE WATER ASSESSMENT FINAL REPORT

May 8, 2001

State of Idaho
Department of Environmental Quality

Table of Contents

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for the City of Franklin* describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Franklin water system consists of three well sources (Well #1, Well #2, and Well #3) and five spring sources (Crooked Creek Springs #1, #2, #3, Dowdell, and Kingsford). Currently, Well # 3 is not connected to the distribution system. The inorganic contaminants fluoride, sulfate, and sodium, have been detected in the source water for the two wells and Crooked Creek Springs, but at levels below the Maximum Contaminant Levels (MCLs) for drinking water. Manganese has also been detected (0.06 mg/L in September 1994 and February 1995) at these sources, but at levels above the MCL (0.05 mg/L). However, at this time, it is not a regulated drinking water chemical. No potential sources of contamination exist within the delineation capture zones except for the Kingsford spring where grazing livestock are present within its capture zones. The final susceptibility ranking for Well #1 and Well #2 is moderate for inorganic contaminants, volatile organic contaminants, synthetic organic contaminants, and microbial contaminants. The final susceptibility ranking for Crooked Creek Spring #1, #2, #3 and Kingsford springs rate low for inorganic, volatile organic, and synthetic organic contaminants, and high for microbial contaminants. For the Dowdell spring, the final susceptibility ranking was low for inorganic, volatile organic, and synthetic organic contaminants, and microbial contaminants

For the City of Franklin, source water protection activities should focus on implementation of practices aimed at keeping the distribution system free of microbial contaminants. For the Crooked Creek Springs, the water system must either abandon the sources or install filtration. For the Kingsford and Dowell Springs, the water system should fence off the area in all directions around these sources. Land uses within most of the springs' source water assessment area are beyond the control of the City of Franklin. Therefore, partnerships with state and local agencies should be established to ensure future land uses are protective of groundwater quality. Due to the time involved with the movement of groundwater, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission and local Soil and Water Conservation District, and the Natural Resources Conservation Service.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact the Pocatello Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR CITY OF FRANKLIN, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are contained in this report. The list of significant potential contaminant source categories and their rankings used to develop this assessment is also attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells and springs, and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

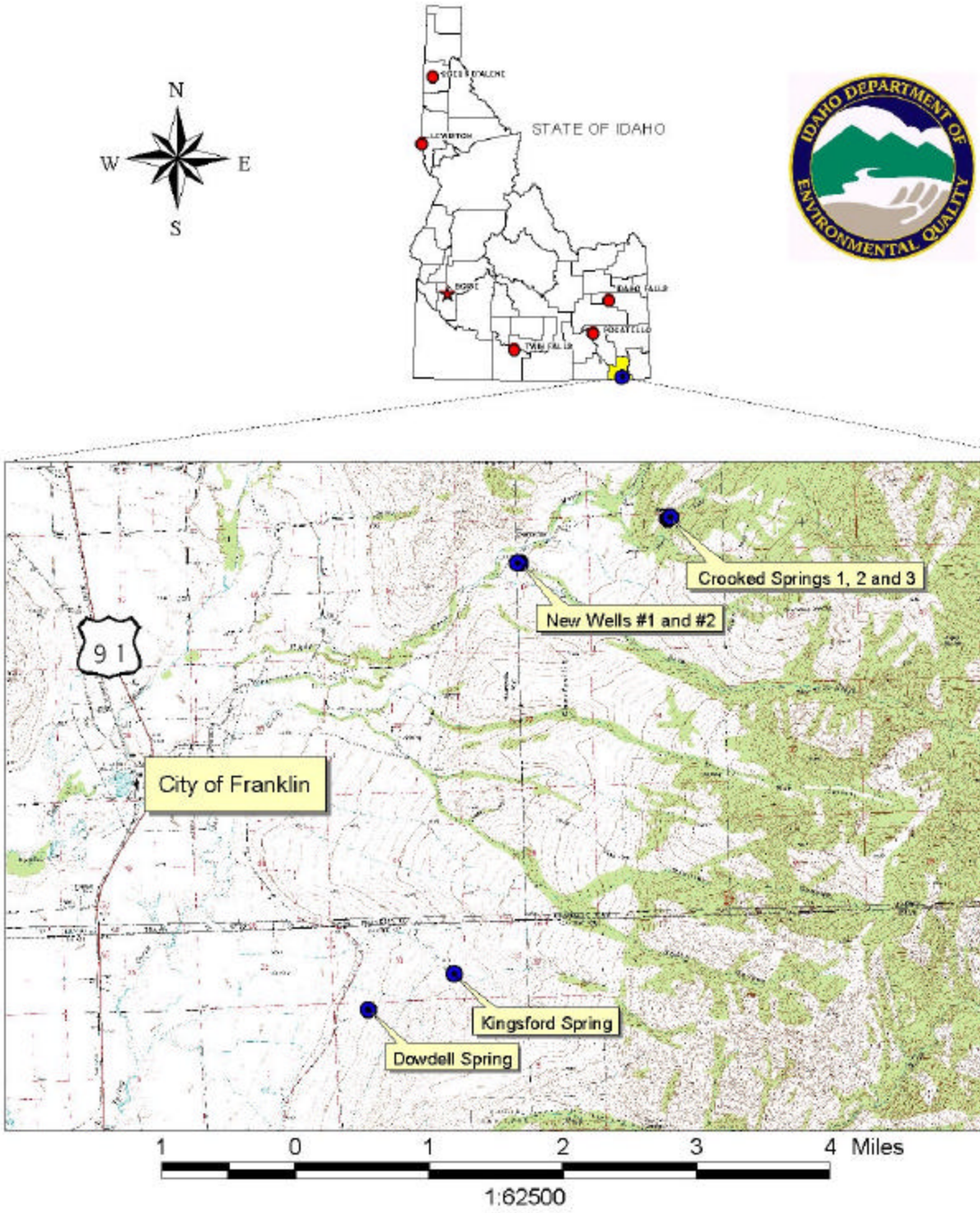
The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. DEQ recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The City of Franklin is a community public drinking water system serving approximately 500 persons. The water system is located just north of the Utah border, near Highway 91 (Figure 1). Water chemistry tests have not detected volatile organic contaminants (VOCs) or synthetic organic contaminants (SOCs) in the source water sources. There is no current, long term, recurring water chemistry problems in the drinking water sources.

Figure 1 - Geographic Location of
City of Franklin Wells and Springs, Franklin County
PWS Number: 6210007



Defining the Zones of Contribution--Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time of travel zones (zones indicating the number of years necessary for a particle of water to reach a pumping well or spring collection area). The City of Franklin contracted Sunrise Engineering, Inc. to delineate the boundaries of its source water assessment zones for the subject springs and wells.

The capture zone boundaries for the Dowdell and Kingsford Springs were delineated together because they are both recharged from the same area (Dowdell and Kingsford Delineation Report, Sunrise Project No. E9006.43). The report states that hydrogeologic mapping was the method selected to delineate these two springs. Using information such as surface-water bodies, groundwater divides, or other physical, hydrogeologic, or geologic features determines these boundaries. Figure 3 of this report is believed to represent the potential recharge boundaries that produce water to the Kingsford and Dowdell Springs. Recharge to the springs is mainly from fractured bedrock in the local Bear River Mountain Range, percolation of surface water runoff, and seepage from High Creek.

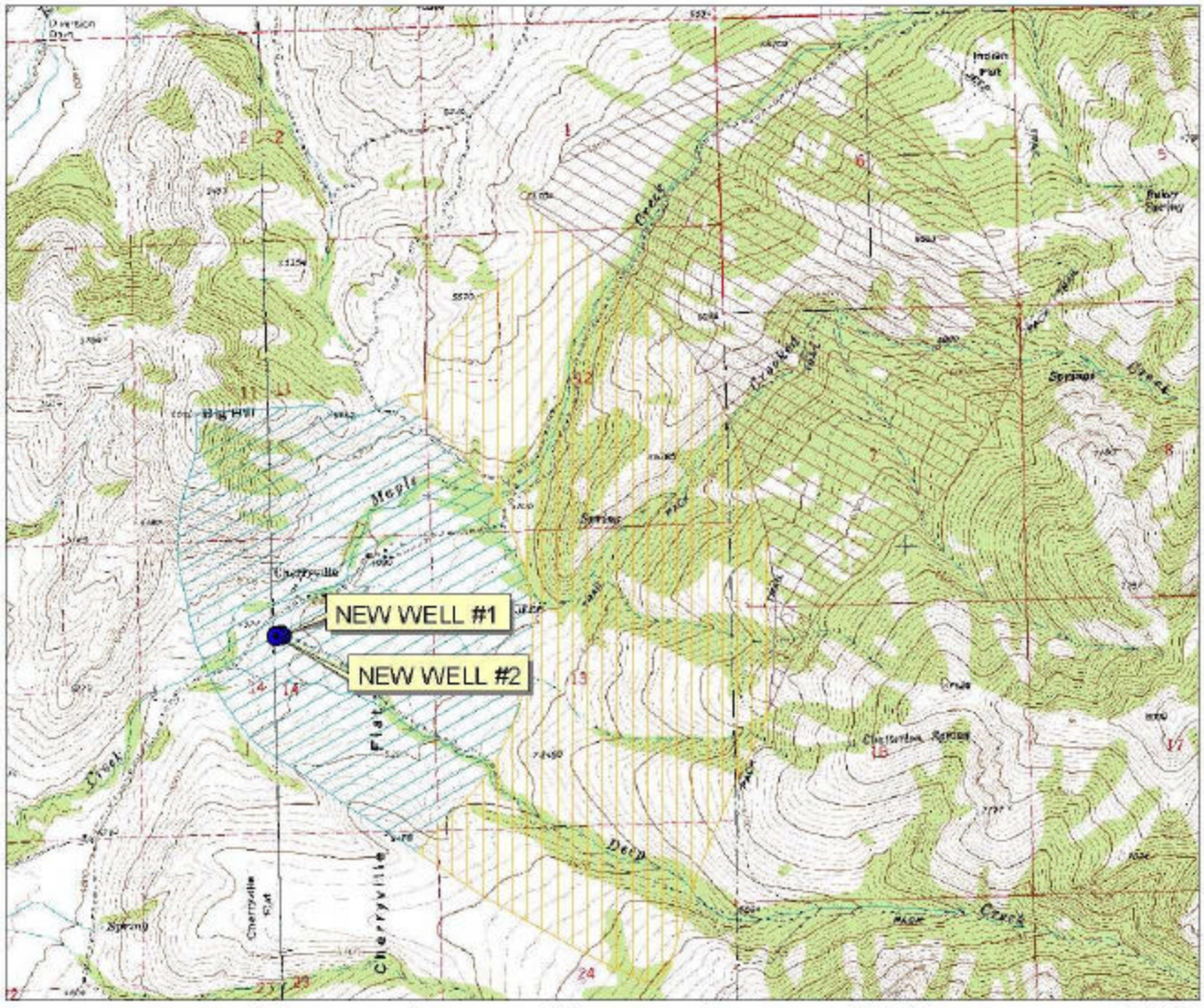
Hydrogeologic mapping was the method selected to delineate the Crooked Creek Springs. Using information such as surface-water bodies, groundwater divides, or other physical, hydrogeologic, or geologic features determines these boundaries. Figure 4 of this report is believed to represent the potential recharge boundaries that produce water to the Crooked Creek Springs. Recharge to the springs is mainly from fractured bedrock in the local Bear River Mountain range (including the Franklin Basin) and possibly from the percolation of surface water runoff and seepage from nearby creeks.

Sunrise Engineering used hydrogeologic mapping in combination with a two-dimensional semi-analytical flow model (WPHA) approved by the EPA to determine the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) time of travel zones (TOT) for water associated with the well sources (Figure 2). The computer model used aquifer parameters, such as porosity, and well information, such as well discharge rate and estimates of local hydraulic gradient to calculate the capture zones. The well-specific information was derived from a variety of sources including sanitary surveys, local well logs, and operator records. The report states that the initial delineations were performed using the WHPA model and finalized by the hydrogeologic mapping method. The actual data used by Sunrise Engineering, Inc. in determining the zones of contributions are available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of groundwater contamination.

Figure 2 - City of Franklin New Well #1 and New Well #2
PWS Number: 6210007



0.5 0 0.5 1 1.5 Miles

1:32000

03/11/2001
Michelle Byrd

N

LEGEND

- Wellhead

Time of Travel Zones

- 1B (3 yr TOT)
- Zone (6 yr TOT)
- Zone (10 yr TOT)

Note: Spring locations and Zone Delineations provided by Sunrise Engineering Inc. Sunrise Project No. E9006.43

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

Restriction of Liability: Neither the State of Idaho nor the Idaho Department of Environmental Quality, nor any of their employees make any warranty, express or implied, or assume any legal liability or responsibility for the accuracy, completeness or usefulness of any information or data provided. Metadata is provided for all data sets, and no data should be used without first reading and understanding its limitations. The data could include technical inaccuracies or typographical errors. The Department of Environmental Quality may update, modify, or revise the data used at any time, without notice.

The *Surface Water Treatment Rule*, a primary drinking water regulation, requires that all groundwater sources be evaluated to determine if they are groundwater under the influence of surface water (GWUDI). Groundwater that is influenced by surface water may travel a relatively short distance in a brief period through aquifer material with large pores or fractures. Under these circumstances pathogenic micro-organisms may be transported in a viable state to the springs, infiltration gallery, or well intakes. For the City of Franklin, final GWUDI evaluations have been performed for all sources. The results of those evaluations indicate that both wells and the Dowdell and Kingsford Springs are groundwater sources not under the influence of surface waters. However, the Crooked Creek Springs are GWUDI sources.

It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at the facility. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A contaminant inventory of the study area was conducted during the winter of 2000. This involved identifying and documenting potential contaminant sources within the City of Franklin Source Water Assessment Area through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. For the City of Franklin Source Water Assessment Area, no potential contaminant sources were found within the delineated source water areas except for the Kingsford spring where grazing livestock are present within its capture zones.

Section 3. Susceptibility Analyses

The susceptibility of the wells and springs to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the wells and spring intake structures, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for the well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

Hydrologic sensitivity rated moderate for the well sources (see Table 1). The soils in the delineation are considered to be in the poor to moderate drainage class. The moderate score reflects the make up of the vadose zone (zone from land surface to the water table) and the lack of significant confining layers within the depth range of the completed well, which would reduce the downward flow of contaminants.

Well Construction

Well construction directly affects the ability of the wells to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the wells. Lower scores imply a system that can better protect the water. If the casing and annular seal both extend into a low permeability unit then the possibility of cross contamination from other aquifer layers is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. When information was adequate, a determination was made as to whether the casing and annular seals extend into low permeability units and whether current public water system (PWS) construction standards are met.

The system construction rating is moderate for the well sources (Table 1). Factors such as the highest production interval of the wells at least 100 feet below the static water level and the wells located outside the 100-year floodplain lowered the construction scores. The wells were given addition points due to the well casings and annular seals not extending into low permeable geologic formations and because they do not meet current Idaho Department of Water Resources (IDWR) well construction standards.

The IDWR *Well Construction Standards Rules (1993)* require all public water systems (PWSs) to follow DEQ standards. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works (1997)* during construction. Various aspects of the standards can be assessed from well logs. Table 1 of the *Recommended Standards for Water Works (1997)* states that 8-inch steel casing requires a thickness of 0.322. For both wells, the thicknesses of the 8-inch steel casings are 0.250-inches. The standards state that screen will be installed and have openings based on sieve analysis of the formation. Standard 3.2.4.1 requires all PWSs to have yield and drawdown tests that last "24 hours or until stabilized drawdown has continued for six hours at 1.5 times the design pumping rate" (Recommended Standards for Water Works, 1997).

Spring Construction

The risk to the water system is considered less if the spring intake is constructed with the proper material and in such a fashion as to prevent the infiltration of unwanted water with the potential to carry contaminants. Furthermore, any amount of soil, riverbed, or lakebed material between the source water and the intake may add some level of protection from potential contaminants. For the Dowdell Spring, Kingsford Spring, and Crooked Spring #1 the spring construction scores were rated low. This reflects the proper construction of the intake and the presence of earthen material between the source water and intake. Crooked Creek Springs #2 and #3 were rated moderate. No information was available regarding whether the intakes of these two springs were properly constructed.

Potential Contaminant Source and Land Use

The wells rated moderate for inorganic chemicals (IOCs) (i.e. fluoride, manganese, sodium) and low for synthetic organic chemicals (SOCs) (i.e. pesticides), volatile organic chemicals (VOCs) (i.e. petroleum products) and microbial contaminants. The springs rated low for inorganic chemicals (IOCs), synthetic organic chemicals (SOCs) (i.e. pesticides), volatile organic chemicals (VOCs) (i.e. petroleum products), and microbial contaminants.

The dominant land use within the capture zones for the wells is irrigated agricultural land. Irrigated agricultural land is thought to represent a higher potential for contamination than non-irrigated land due to the increased potential for irrigation water runoff. The dominant land use within the capture zone for the springs is mountainous terrain.

Final Susceptibility Rating

A detection above a drinking water standard Maximum Contaminant Level (MCL), any detection of a VOC or SOC, or a detection of total coliform or fecal coliform will automatically give a high susceptibility rating to the final well ranking despite the land use of the area because a pathway for contamination already exists. In this case, the final well rankings were moderate for IOC, VOC, SOC contaminants and microbial contaminants. The final spring rankings were low for IOC, VOC, SOC, and high for microbial contaminants.

Table 1. Summary of City of Franklin Susceptibility Evaluation

Source	Susceptibility Scores									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Wells #1 & #2	M	M	L	L	L	M	M*	M	M	M
Dowdell Spring	NA	L	L	L	L	L	L	L	L	L
Kingsford Spring	NA	L	L	L	L	L	L	L	L	H*
Crooked Creek #1	NA	L	L	L	L	L	L	L	L	H**
Crooked Creek #2	NA	L	L	L	L	M	L	L	L	H**
Crooked Creek #3	NA	L	L	L	L	M	L	L	L	H**

H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
M* - Indicates source automatically scored as moderate susceptibility due to presence of manganese above the maximum contaminant level in the tested drinking water, H* - Indicates spring source automatically scored as high susceptibility due to the presence of livestock in the spring collection area, H - Indicates spring source automatically scored high susceptibility due to final GWUDI determination, NA = not applicable**

Susceptibility Summary

DEQ records indicate no detection of a VOC or SOC contaminant in the water sources. The Crooked Creek Springs were determined GWUDI sources, therefore, those sources were considered rated high susceptibility in the final ranking section of the susceptibility analysis. The Kingsford Spring was considered rated high susceptibility in the final ranking section due to the presence of grazing livestock in the collection areas.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For the City of Franklin, source water protection activities should focus on implementation of practices aimed at keeping the distribution system free of microbial contaminants. For the Crooked Creek Springs, the water system must either abandon the sources or install filtration. For the Kingsford Spring, the water system should fence off the area in all directions around this source. Land uses within most of the source water assessment area are beyond the control of the City of Franklin. Therefore, partnerships with state and local agencies should be established to ensure future land uses are protective of groundwater quality. Due to the time involved with the movement of groundwater, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture and the Soil Conservation Commission and local Soil and Water Conservation District, and the Natural Resources Conservation Service.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Pocatello Regional DEQ Office (208) 236-6160

State DEQ Office (208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper, Idaho Rural Water Association, at 208-343-7001 for assistance with wellhead protection strategies.

References Cited

Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environment Managers, 1997. "Recommended Standards for Water Works."

Idaho Department of Environmental Quality. 1997. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resource Board: Well Construction Standards Rules. IDAPA 37.03.09.

Idaho Department of Environmental Quality. 1999. *Sanitary Survey Report for City of Franklin*

Sunrise Engineering, Inc. August 31, 1999. Delineation Report Source Water Assessment Plan. New Wells #1, #2, and #3. City of Franklin. Sunrise Project No. E9006.43

Sunrise Engineering, Inc. August 31, 1999. Delineation Report Source Water Assessment Plan. Crooked Creek Springs #1, #2, and #3. City of Franklin. Sunrise Project E9006.43

Sunrise Engineering, Inc. September 16, 1999. Delineation Report Source Water Assessment Plan. Dowdell and Kingsford Springs. City of Franklin. Sunrise Project No. E9006.43.

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of any enhanced inventory

Attachment A

City of Franklin Susceptibility Analysis Worksheet

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Well Source Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Spring Source Final Susceptibility Scoring

0-7 = Low Susceptibility

8-15 = Moderate Susceptibility

16-21 = High Susceptibility

Groundwater Susceptibility Report Public Water System Name : FRANKLIN CITY OF NEW WELL #1
Public Water System Number 6210007

1. System Construction		SCORE
Drill Date	8/25/94	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	YES	1999
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	YES	0
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		3

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
Total Hydrologic Score		4

3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED PASTURE	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	YES	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		1	1	1	1
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or	YES	4	0	0	
4 Points Maximum		4	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land	4	4	4	4
Total Potential Contaminant Source / Land Use Score - Zone 1B		8	4	4	4
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	YES	1	0	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
Potential Contaminant Source / Land Use Score - Zone II		3	2	2	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	YES	1	0	0	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III		2	1	1	0
Cumulative Potential Contaminant / Land Use Score		14	8	8	5
4. Final Susceptibility Source Score		10	9	9	9
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

Groundwater Susceptibility Report Public Water System Name : FRANKLIN CITY OF NEW WELL #2
Public Water System Number 6210007

1. System Construction			SCORE			
Drill Date		2/10/95				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	1999			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		YES	0			
Total System Construction Score			3			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		YES	0			
Vadose zone composed of gravel, fractured rock or unknown		YES	1			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		NO	2			
Total Hydrologic Score			4			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A		IRRIGATED PASTURE	1	1	1	1
Farm chemical use high		NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		YES	YES	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			1	1	1	1
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum			0	0	0	0
Sources of Class II or III leacheable contaminants or		YES	4	0	0	
4 Points Maximum			4	0	0	
Zone 1B contains or intercepts a Group 1 Area		NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land		4	4	4	4
Total Potential Contaminant Source / Land Use Score - Zone 1B			8	4	4	4
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		NO	0	0	0	
Sources of Class II or III leacheable contaminants or		YES	1	0	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land		2	2	2	
Potential Contaminant Source / Land Use Score - Zone II			3	2	2	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		NO	0	0	0	
Sources of Class II or III leacheable contaminants or		YES	1	0	0	
Is there irrigated agricultural lands that occupy > 50% of		YES	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III			2	1	1	0
Cumulative Potential Contaminant / Land Use Score			14	8	8	5
4. Final Susceptibility Source Score			10	9	9	9
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate

Spring Water Susceptibility Report Public Water System Name : FRANKLIN CITY OF CROOKED SPRING #2
Public Water System Number 6210007

1. System Construction		SCORE
Intake structure properly constructed	NO	1
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	1

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	YES	microbials detected in GWUDI-MPA sampling			
Sources of class II or III contaminants or microbials	present within the small stream segment of	0	0	0	1
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	NO	0	0	0	0
	Total Potential Contaminant Source / Land Use Score	0	0	0	2
3. Final Susceptibility Source Score		0	0	0	2
4. Final Source Ranking		Low	Low	Low	High

* Special consideration due to significant contaminant sources
Source is considered High Susceptibility

Spring Water Susceptibility Report Public Water System Name : FRANKLIN CITY OF CROOKED SPRING #3
Public Water System Number 6210007

1. System Construction		SCORE
Intake structure properly constructed	NO	1
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	1

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	YES	microbials detected in GWUDI-MPA sampling			
Sources of class II or III contaminants or microbials	present within the small stream segment of		0	0	1
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	NO	0	0	0	0
	Total Potential Contaminant Source / Land Use Score	0	0	0	2
3. Final Susceptibility Source Score		0	0	0	2
4. Final Source Ranking		Low	Low	Low	High

* Special consideration due to significant contaminant sources
Source is considered High Susceptibility

Spring Water Susceptibility Report Public Water System Name : FRANKLIN CITY OF CROOKED SPRING #1
Public Water System Number 6210007

1. System Construction		SCORE
Intake structure properly constructed	YES	0
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	0

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	YES	microbials detected in GWUDI-MPA sampling			
Sources of class II or III contaminants or microbials	not present	0	0	0	0
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	NO	0	0	0	0
	Total Potential Contaminant Source / Land Use Score	0	0	0	0
3. Final Susceptibility Source Score		0	0	0	0
4. Final Source Ranking		Low	Low	Low	High

* Special consideration due to significant contaminant sources
The source is considered High Susceptibility

Spring Water Susceptibility Report Public Water System Name : FRANKLIN CITY OF KINGSFORD SPRING
Public Water System Number 6210007

1. System Construction		SCORE
Intake structure properly constructed	YES	0
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	0

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	YES	livestock allowed over spring area			
Sources of class II or III contaminants or microbials	present within the small stream segment of	1	0	0	1
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	NO	0	0	0	0
	Total Potential Contaminant Source / Land Use Score	2	0	0	2
3. Final Susceptibility Source Score		2	0	0	2
4. Final Source Ranking		Low	Low	Low	High

* Special consideration due to significant contaminant sources
Source is considered High Susceptibility

Spring Water Susceptibility Report Public Water System Name : FRANKLIN CITY OF DOWDELL SPRING #1
Public Water System Number 6210007

1. System Construction		SCORE
Intake structure properly constructed	YES	0
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	0

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials	present within the small stream segment of	0	0	0	0
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	NO	0	0	0	0
	Total Potential Contaminant Source / Land Use Score	0	0	0	2
3. Final Susceptibility Source Score		0	0	0	0
4. Final Source Ranking		Low	Low	Low	Low

* Special consideration due to significant contaminant sources
Source is considered High Susceptibility